

#### IV. REMARKS

Reconsideration of this application is respectfully requested in view of the amendments to the claims and the remarks that follow.

Claim 18 has been amended to more clearly define applicants' invention, and support for these claim amendments can be found, for example, Figs. 1, 3a, and 4a, and in paragraphs [0015], [0051], and [0056] of the Specification (all references to the Specification herein being to the numbered paragraphs of the application as published on September 6, 2007 and assigned Pub. No. US 2007/0207366). New independent claim 39 complies fully with Section 112 and has been added to provide adequate coverage for the invention. Support for this claim can be found, for example, in Figs. 1, 3a, and 4a, and in paragraphs [0015], [0051], and [0056] of the Specification. No new matter has been introduced by these amendments.

#### Interview Summary

Applicants appreciate the cooperation of the Examiner in discussing this application during the telephone interview with applicant's undersigned counsel on July 25, 2011. As noted in the Examiner's Interview Summary dated August 2, 2011, the Section 112 rejections of claim 18 were discussed and it was agreed that the claim would be amended to more particularly define the invention. Claim 18 has been amended herein to more clearly define the lack of a continuous channel in the face of the first plate that faces the second plate. There was also a discussion of the nature of the structure shown in Fig. 3a.

Claim Rejections – 35 USC §112

1. Claims 18, 20-25, 37 and 38 have been rejected under 35 USC §112, first paragraph, as failing to comply with the written description requirement. In this regard, it is asserted that the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

With regard to claim 18 specifically, it is alleged that the claim limitation “and within the first plate form no continuous channel linking one edge of the plate with another edge of the plate” is new matter because the instant specification does not describe such claim limitation in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. In the Office Action, the Examiner takes the position that Fig. 3a and paragraph [0056] of the published specification appear to support a first plate wherein the cavities form numerous continuous channels linking one edge of the plate another edge of the plate, asserting that “[s]uch continuous channels are located throughout the first plate linking one edge of the plate with another edge of the plate.” During the noted phone interview, the Examiner further explained his position that the term “edge” could be very broadly interpreted to include even a part of the border of an individual cavity.

As noted in MPEP 2163.04, a description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption. See, e.g., *In re Marzocchi*, 439 F.2d 220, 224,

169 USPQ 367, 370 (CCPA 1971). The examiner, therefore, must have a reasonable basis to challenge the adequacy of the written description. The examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. *Wertheim*, 541 F.2d at 263, 191 USPQ at 97.

As amended, claim 18 defines a separator for electrochemical systems, comprising a first conductive plate having a face and defining a plane and a second conductive plate having a face. Each plate includes a series of projections extending outwardly therefrom, wherein each of the projections have a corresponding cavity defined on the opposite side thereof in the face of the respective plate. When the faces of the first and second plates are brought into an overlapping relationship facing one another, at least a subset of the cavities of the first plate engage a subset of the cavities of the second plate to provide at least one flow path between the first plate and the second plate. Moreover, the cavities of the first plate are dissimilar in shape from the cavities of the second plate, and the cavities on the first plate are discrete and spaced from one another in a distributed manner over the face of the first plate defining a region having a periphery, such that the cavities on the face of the first plate form no continuous channel entirely within the plane of the first plate and linking one edge of the periphery of the region of the face of the first plate with another edge of the periphery of the region of the face of the first plate. The cavities on the second plate form at least one connecting passage between discrete and spaced apart cavities on the first plate.

Clearly, a person skilled in the art would recognize in the applicants' disclosure a description of the invention defined by amended claim 18. Initially, and as discussed

during the phone interview, Fig. 3a shows the **outer side** of the first plate 2 that is **facing away** from the second plate 3, as clearly stated in paragraph [0056]. Thus, the features 5 that are projections on the outer side as shown in Fig. 3a, are corresponding cavities on the opposed, inner side that faces the second plate 3. Once that is understood, it can easily be appreciated that there are indeed continuous channels located on the **outer side** of the first plate in between each row of “H” shaped protrusions, as noted by the Examiner.

It is no less clear then, that on the opposite side of the first plate (that is, the face of the first plate having the corresponding cavities and facing the second plate) the cavities “are discrete and spaced from one another in a distributed manner over the face of the first plate defining a region having a periphery,” and that such cavities “form no continuous channel entirely within the plane of the first plate and linking one edge of the periphery of the region of the face of the first plate with another edge of the periphery of the region of the face of the first plate,” as claimed.

As a result, it is only when the cavities on the second plate form at least one connecting passage between discrete and spaced apart cavities on the first plate, as also defined by claim 18, that a continuous channel is formed linking one edge of the periphery of the region of the face of the first plate with another edge of the periphery of the region of the face of the first plate. This is illustrated, for example, in paragraph [0021] of the Specification, which states:

With this, it is particularly advantageous for the projections on the first plate and the corresponding channel structures on the second plate to be designed such that the projections form a cross-over (connecting passage) of cooling fluid from a first channel of the channel structure to a second channel of the channel structure. This for example is the

case if regions which are unconnected to one another, e.g. grooves lying next to one another, are formed on the second plate, which are not connected to one another in a fluid-conducting manner. Here, by way of the joining of the first plate to the second, it occurs that the projections form quasi "bridges" or a cross-over (connection) from e.g. one groove to an adjacent groove.

This is further illustrated in Figs. 4a, which is described in paragraph [0062] as showing:

... the flow paths with a bipolar plate 1 which comprise plates according to FIGS. 3a and 3b. Here the first plate comprises "H"-shaped sections shown in FIG. 3a, wherein the second plate (see FIG. 3b) comprises groove-like sections lying next to one another, thus e.g. a first groove-like channel 7.1 and a second groove-like channel 7.2. Here the perpendicular members of the "H" are distanced to one another by the same distance as the first channel 7.1 or the second channel 7.2, so that the position shown in FIG. 4a partly overlap. By way of this it becomes possible for fluid led in the first channel 7.1 to be led via the transverse member of the "H" in the first channel 7.1 into the second 7.2 without exiting from the cavity 8.

As any continuous channel formed by one or more cavities on the face of the first plate also relies on one more cavities formed in the second plate, the cavities on the face of the first plate do in fact "form no continuous channel entirely within the plane of the first plate," as claimed and as adequately described in the application.

For all of these reasons, all of the claims are in full compliance with the written description requirement of 35 USC §112, and these rejections should be withdrawn.

2. Claims 18, 20-25, 37 and 38 have similarly been rejected under 35 USC §112, first paragraph, as failing to comply with the enablement requirement. In this regard, the Examiner asserts that the above noted claim limitation of claim 18 is not enabled "because such claim limitation would render the first plate inoperable for its

intended purpose.” More specifically, the Examiner takes the position that “[a] first plate that lacks a continuous channel linking one edge of the plate with another edge of the plate would cease to function as a separator since the fluid traversing said separator is required to flow from an inlet to an outlet of said separator, thus requiring a continuous channel linking one edge of the plate with another edge of the plate.” The Examiner further alleges that the specification lacks any working examples including such limitation or direction to make and/or use the invention as claimed.

Section 112 requires only an objective enablement; that is, the invention needs to be sufficiently disclosed through illustrative examples or terminology to teach those of ordinary skill in the art how to make and how to use the invention as broadly as it is claimed. *In Re Marzocchi*, 169 USPQ 367 (Fed. Cir. 1971). One of ordinary skill in the art must be able to make and use the invention without “undue experimentation.” Some experimentation on the part of the artisan is not fatal. *Northern Telecom, Inc. v. Data Point Corp.*, 15 USPQ 2d, 1321 (Fed. Cir. 1990). The patent document need not be a production specification, either the experimentation must be routine, or the specification must give “a reasonable amount of guidance with respect to the direction in which the experimentation should proceed to enable the determination of how to practice a desired embodiment of the invention claimed.” *PPG Industries v. Guardian Industries, Corp.*, 37 USPQ 2d 1618 (Fed. Cir. 1996).

As discussed above, the structure described in the specification and defined by claim 18 is fully operable and functional. When the cavities on the second plate form at least one connecting passage between discrete and spaced apart cavities on the first plate, as defined by claim 18, continuous channels are formed between the two plates

that link one edge of the periphery of the region of the face of the first plate with another edge of the periphery of the region of the face of the first plate. There is no functional need for the cavities in the face of the first plate to be capable of forming such continuous channels without utilizing one or more cavities formed in the second plate, such cavities in the second plate being outside the plane of the first plate.

For all of the reasons discussed above, it is respectfully submitted that there is no reasonable basis to question the enablement provided for the invention of claim 18. As noted at MPEP 2164, a specification disclosure which contains a teaching of the manner and process of making and using an invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as being in compliance with the enablement requirement of 35 U.S.C. 112, first paragraph, unless there is a reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support.

Accordingly, and for all of the reasons discussed above, it is requested that the Examiner reconsider and withdraw the rejection of the claims based upon the enablement requirement of 35 USC §112, first paragraph.

3. Claims 18, 20-25, 37 and 38 have also been rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

With regard to same limitation of claim 18 at issue above, it is asserted in the Office Action that it is unclear how the first plate's cavities could possibly have no continuous channels linking one edge of the plate with another edge of the plate,

especially in view of the broadness of the interpretation given the term "edge," which could include "any edge of one of said protrusions."


In view of the discussions above relative to the rejections based on the first paragraph of Section 112, it is submitted that amended claim 18 properly defines a functional structure in which the first plate's cavities do in fact have no continuous channels as defined. The pending claims thus all comply fully with 35 USC §112, second paragraph, and those rejections should be withdrawn.

#### Conclusion

For all reasons discussed herein, applicants submit that the current application is now in condition for allowance. A timely action to that end is courteously solicited.

If the Examiner would prefer language different from that proposed by applicants, a telephone call to applicant's attorney is requested to expedite prosecution.

Respectfully submitted,



Donald A. Schurr  
Registration No. 34,247

ATTORNEYS  
MARSHALL & MELHORN, LLC  
Four SeaGate - 8<sup>th</sup> Floor  
Toledo, Ohio 43604  
Phone: (419) 249-7145  
Fax: (419) 249-7151